UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,028	07/21/2000	Eric J. Bergman	255/236 P00-0036US2	4066

22249 7590 03/11/2002

LYON & LYON LLP
633 WEST FIFTH STREET
SUITE 4700
LOS ANGELES, CA 90071

EXAMINER	
EL ARINI, ZEINAB	

ART UNIT	PAPER NUMBER
1746	8

DATE MAILED: 03/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-8

Office Action Summary	Application No. 09/621,028	Applicant(s) BERGMAN, ERIC J.	
	Examiner Zeinab E. EL-Arini	Art Unit 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 4 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-24 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-24 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 2, " the surface", and at line 6, " the thickness" are all without proper antecedent basis.

In claim 2, line 1, " the surface", and at line 7, " the thickness" are all without proper antecedent basis.

In claim 23, line 1, " the thickness", at lines 1-2, " the liquid layer", and at lines 4-5, " the treatment liquid" are all without proper antecedent basis.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the steps of processing the workpiece.

4. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the steps of cleaning the workpiece.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosofsky et al. (5,803,982) in combination with Mashimo et al. (5,415,191), Yoneda (5,896,875), Bergman (5,232,511), and Matthews (5,776,296).

Kosofsky et al. teach a pressure washing apparatus with ozone generator. See the abstract and the document in general. Kosofsky et al. do not teach the flow rate, controlling the thickness of the heated liquid, and the liquid solution as claimed.

Mashimo et al. teach the mass-flow controllers and the liquid solution, and the ozone as claimed. See the abstract, and the document in general.

Yoneda teaches the heater, the liquid, the mist, the ozone, and forming thin film on the surface of the wafer. See col. 6, lines 39-50, and Fig. 7, and the document in general.

Bergman teaches uniform etching and cleaning to the semiconductor wafer. Bergman teaches the rotation, and the cleaning solution. See the abstract, and the document in general.

Matthews teaches diffusing the ozone as claimed. See the abstract and the document in general.

It would have been obvious for one skilled in the art to use the liquid solution (water and HF or HCL) taught by Mashimo et al. in the Kosofsky et al. process to obtain the claimed invention. This is because using water and HCL or HF is well known in the semiconductor treating art.

One skilled in the art would use the teaching of the heated solution and forming thin film on the surface of the wafer taught by Yoneda in the Kosofsky et al. in combination with Mashimo et al. to improve the cleaning process.

It would have been obvious for one skilled in the art to use the rotating or controlling the heated liquid taught by Bergman in the Kosofsky et al. in combination with Mashimo et al. and Yoneda et al. process to obtain uniform dispersion of the homogeneous reactant vapors across the wafer surface and to facilitate vapor circulation to the processed surface.

It would have been obvious for one skilled in the art to adjust the concentration, and the flow rate to obtain optimum results.

It would have been obvious for one skilled in the art to use the teaching of diffusing the ozone of Matthews in the Kosofsky et al. in combination with Mashimo et al. , Yoneda, and Bergman process to obtain the claimed invention. This is because all references are from the same technical endeavor, which is a method and apparatus for processing a workpiece.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 15-19, 23, and 24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 7-9, 13-23, 25 of U.S. Patent No. 6,267,125. Although the conflicting claims are not identical, they are not patentably distinct from each other because the apparatus as claimed is functionally equivalent to the apparatus claimed in 6,267,125 patent.

9. Claims 1-2, 5-9, 11 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 7, 9-13,15, 17, 22-24, 37-38, 41-44, 57, 61-66, 68, 73-74, 77-79, 81-82, and 85 of U.S. Patent No. 6,240,933. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process as claimed is functionally equivalent to the process claimed in the 6,240,933 patent.

10. Claims 15, 17-19, and 22-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 6,273,108. Although the conflicting claims are not identical, they are not patentably distinct from each other because the apparatus as claimed is functionally equivalent to the apparatus claimed in 6,273,108 patent.

11. Claims 1, 2, 5-9, 11-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 92, 95, 97-102, 104, and 107-110 of copending Application No. 09/811,925. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process as claimed is functionally equivalent to the process claimed in the 09/811,925 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. Claims 1-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15, 18-19, and 22-30 of copending Application No. 09/536,251. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process as claimed is functionally equivalent to the process claimed in the 09/536,251 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. Claims 1, 8-9, 11, 15, 17, 19, and 23-24 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 9-14, and 16-22, 25-25, and 27-28, of copending Application No. 09/837,722. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process and apparatus as claimed are functionally equivalent to the process and apparatus claimed in the 09/837,722 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. Claims 1, 5, and 11 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 7, 10-13, 15-18, and 20-21 of copending Application No. 09/836,080. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process as claimed is functionally equivalent to the process claimed in the 09/836,080 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

15. Claims 15-19, and 21-24 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 87-89, 91, 95-99, and 101-102 of copending Application No. 09/061,318. Although the conflicting claims are not identical, they are not patentably distinct from each other because the apparatus as claimed is functionally equivalent to the apparatus claimed in 09/061,318 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeinab E. EL-Arini whose telephone number is (703) 308-3320. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7719 for regular communications and (703)305-7719 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Zeinab E. EL-Arini
Primary Examiner
Art Unit 1746

ZEE
March 6, 2002